In the Claims:

Claim 1 (previously presented): A noise attenuation system for speech coding comprising:

an encoder disposed to receive a digitized signal, the encoder to provide a bitstream based upon a speech coding of the digitized signal;

where the speech coding determines at least one gain scaling a portion of the digitized signal; and

where the encoder adjusts the at least one gain as a function of noise characteristic for attenuating background noise in at least one frame,

wherein the at least one gain is adjusted according to a gain factor, the gain factor facilitating time-domain background noise attenuation.

Claim 2 (original): The noise attenuation system according to Claim 1, where the speech coding comprises code excited linear prediction (CELP).

Claim 3 (original): The noise attenuation system according to Claim 1, where the speech coding comprises extended code excited linear prediction (eX-CELP).

Claim 4 (original): The noise attenuation system according to Claim 1, where the at least one gain is adjusted prior to quantization by the speech coding.

Claim 5 (previously presented): The noise attenuation system according to Claim 1, where the encoder adjusts the at least one gain according to the gain factor.

Claim 6 (original): The noise attenuation system according to Claim 5, where the gain factor Gf is determined by the equation,

$$Gf = 1 - C \cdot NSR$$

where NSR has a value of about 1 when the portion comprises essentially background noise, where NSR is the square root of background noise energy divided by signal energy when the portion comprises speech, and where C is in the range of 0 through 1.

Claim 7 (original): The noise attenuation system according to Claim 6, where C is in the range of about 0.4 through about 0.6.

Claim 8 (original): The noise attenuation system according to Claim 6, further comprising a voice activity detector (VAD) operatively connected to the encoder, the VAD to determine when the portion comprises speech.

Claim 9 (original): The noise attenuation system according to Claim 5, where the gain factor is based on a running mean.

Claim 10 (original): The noise attenuation system according to Claim 9, where the running mean Gf new is determined by the equation,

$$Gf_{new} = \alpha \cdot Gf_{old} + (1 - \alpha) \cdot Gf_{current}$$

where Gf_{old} is a preceding gain factor for a preceding portion of the digitized signal, where $Gf_{current}$ is the gain factor based on the portion of the digitized signal, and where $0 \leq \alpha < 1$.

Claim 11 (original): The noise attenuation system according to Claim 10, where α is equal to about 0.5.

Claim 12 (original): The noise attenuation system according to Claim 1, where the portion of the digitized signal is one of a frame, a sub-frame, and a half frame.

Claim 13 (original): The noise attenuation system according to Claim 1, where the encoder comprises a digital signal processing (DSP) chip.

Claim 14 (original): The noise attenuation system according to Claim 13, further comprising a preprocessor operatively connected to receive the digitized signal from the analog-to-digital converter, the preprocessor to modify spectral magnitudes of the digitized signal to reduce noise, the preprocessor to provide a noise-suppressed digitized signal to the encoder.

Claim 15 (original): The noise attenuation system according to Claim 1, further comprising a decoder operatively connected to receive the bitstream from the encoder, the decoder to provide a reconstructed signal based upon the bitstream.

Claim 16 (previously presented): A noise attenuation system for speech coding comprising:

a decoder disposed to receive a bitstream, the decoder to provide a reconstructed signal based upon a speech decoding of the bitstream;

where the speech decoding determines at least one gain scaling a portion of the reconstructed signal; and

where the encoder adjusts the at least one gain as a function of noise characteristic for attenuating background noise in at least one frame,

wherein the at least one gain is adjusted according to a gain factor, the gain factor facilitating time-domain background noise attenuation.

Claim 17 (original): The noise attenuation system according to Claim 16, where the speech decoding comprises code excited linear prediction (CELP).

Claim 18 (original): The noise attenuation system according to Claim 16, where the speech decoding comprises extended code excited linear prediction (eX-CELP).

Claim 19 (original): The noise attenuation system according to Claim 16, where the at least one gain is adjusted after decoding by the speech decoding.

Claim 20 (previously presented): The noise attenuation system according to Claim 16, where the decoder adjusts the at least one gain according to the gain factor.

Claim 21 (original): The noise attenuation system according to Claim 20, where the gain factor Gf is determined by the equation,

$$Gf = 1 - C \cdot NSR$$

where NSR has a value of about 1 when the portion comprises essentially background noise, where NSR is the square root of background noise energy divided by signal energy when the portion comprises speech, and where C is in the range of 0 through 1.

Claim 22 (original): The noise attenuation system according to Claim 21, where C is in the range of about 0.4 through about 0.6.

Claim 23 (original): The noise attenuation system according to Claim 21, further comprising a voice activity detector (VAD) operatively connected to the decoder, the VAD to determine when the portion comprises speech.

Claim 24 (original): The noise attenuation system according to Claim 20, where the gain factor is based on a running mean.

Claim 25 (original): The noise attenuation system according to Claim 24, where the running mean Gf_{new} is determined by the equation,

$$G_{new} = \alpha \cdot Gf_{old} + (1 - \alpha) \cdot Gf_{current}$$

where Gf_{old} is a preceding gain factor for a preceding portion of the reconstructed signal, where

$Gf_{current}$ is the gain factor based on the portion of the reconstructed signal, and where $0 \leq \alpha < 1$.

Claim 26 (original): The noise attenuation system according to Claim 25, where α is equal to about 0.5.

Claim 27 (original): The noise attenuation system according to Claim 16, where the portion of the reconstructed signal is one of a frame, a sub-frame, and a half frame.

Claim 28 (original): The noise attenuation system according to Claim 16, where the decoder comprises a digital signal processing (DSP) chip.

Claim 29 (original): The noise attenuation system according to Claim 16, further comprising an encoder operatively connected to provide the bitstream to the decoder.

Claim 30 (previously presented): A noise attenuation system for speech coding comprising:

an encoder disposed to receive a digitized signal, the encoder to provide a bitstream based upon a speech coding of the digitized signal, where the speech coding determines at least one gain scaling a portion of the digitized signal, and where the encoder adjusts the at least one gain as a function of noise characteristic; and

a decoder operatively connected to receive the bitstream from the encoder, where the decoder provides a reconstructed signal based upon a speech decoding of the bitstream, where

the speech decoding reconstructs the at least one gain scaling the portion of the digitized signal, and where the decoder adjusts the at least one gain as a function of noise characteristic for attenuating background noise in at least one frame, wherein the at least one gain is adjusted according to a gain factor, the gain factor facilitating time-domain background noise attenuation.

Claim 31 (original): The noise attenuation system according to Claim 30, where the speech coding and the speech decoding comprise code excited linear prediction (CELP).

Claim 32 (original): The noise attenuation system according to Claim 30, where the speech coding and the speech decoding comprise extended code excited linear prediction (eX - CELP).

Claim 33 (original): The noise attenuation system according to Claim 30, where at least one of the encoder and the decoder adjusts the at least one gain.

Claim 34 (original): The noise attenuation system according to Claim 30, where at least one of the encoder and the decoder adjusts the gain according to a gain factor.

Claim 35 (original): The noise attenuation system according to Claim 34, where the gain factor Gf is determined by the equation,

$$Gf = 1 - C \cdot NSR$$

where NSR has a value of about 1 when the portion comprises essentially background noise,

where NSR is the square root of background noise energy divided by signal energy when the portion comprises speech, and where C is in the range of 0 through 1.

Claim 36 (original): The noise attenuation system according to Claim 35, where C is in the range of about 0.4 through about 0.6 when one of the encoder and the decoder adjusts the gain by the gain factor.

Claim 37 (original): The noise attenuation system according to Claim 35, where C is in the range of about 0.2 through about 0.4 when the encoder and the decoder adjust the gain by the gain factor.

Claim 38 (previously presented): The noise attenuation system according to Claim 35, further comprising a voice activity detector (VAD) operatively connected to at least one of the encoder and the decoder, the VAD to determine when the portion comprises speech.

Claim 39 (original): The noise attenuation system according to Claim 34, where the gain factor is based on a running mean.

Claim 40 (original): The noise attenuation system according to Claim 39, where the running mean Gf_{new} is determined by the equation,

$$Gf_{new} = \alpha \cdot Gf_{old} + (1 - \alpha) \cdot Gf_{current}$$

where Gf_{old} is a preceding gain factor for a preceding portion of the digitized signal, where

$Gf_{current}$ is the gain factor based on the portion of the digitized signal, and where $0 \leq \alpha < 0$.

Claim 41 (original): The noise attenuation system according to Claim 40, where α is equal to about 0.5.

Claim 42 (original): The noise attenuation system according to Claim 30, where the portion of the digitized signal is one of a frame, a sub-frame, and a half frame.

Claim 43 (original): The noise attenuation system according to Claim 30, further comprising:

an analog-to-digital converter disposed to receive and convert an analog signal into the digitized signal; and

a preprocessor operatively connected to provide the digitized signal from the analog-to-digital converter to the encoder, the preprocessor to modify spectral magnitudes of the digitized signal to reduce noise.

Claim 44 (original): The noise attenuation system according to Claim 30, where at least one of the encoder and the decoder comprises a digital signal processing (DSP) chip.

Claim 45 (previously presented): A method of attenuating noise in a speech coding system, comprising:

(a) segmenting a digitized signal into at least one portion;

(b) determining at least one gain scaling the digitized signal within the one portion;

(c) adjusting the at least one gain as a function of noise characteristic; and

(d) quantizing the at least one gain into a group of at least one bit for a bitstream,

where the at least one gain is adjusted as a function of noise characteristic for attenuating background noise in at least one frame,

wherein the at least one gain is adjusted according to a gain factor, the gain factor facilitating time-domain background noise attenuation.

Claim 46 (original): The method of attenuating noise according to Claim 45, where the speech coding system comprises code excited linear prediction (CELP).

Claim 47 (original): The method of attenuating noise according to Claim 45, where the speech coding system comprises extended code excited linear prediction (eX-CELP).

Claim 48 (original): The method of attenuating noise according to Claim 45, where step (a) further comprises:

sampling an analog signal to produce the digitized signal; and

modifying the spectral magnitudes of the digitized signal to reduce noise.

Claim 49 (previously presented): The method of attenuating noise according to Claim 45, where step (c) further comprises adjusting the at least one gain according to the gain factor.

Claim 50 (original): The method of attenuating noise according to Claim 49, where the gain factor Gf is determined by the equation

$$Gf = 1 - C \cdot NSR$$

where NSR has a value of about 1 when the portion comprises essentially background noise, where NSR is the square root of background noise energy divided by signal energy when the portion comprises speech, and where C is in the range of 0 through 1.

Claim 51 (original): The method of attenuating noise according to Claim 49, where the gain factor is based on a running mean.

Claim 52 (original): The method of attenuating noise according to Claim 51, where the running mean Gf_{new} is determined by the equation,

$$Gf_{new} = \alpha \cdot Gf_{old} + (1 - \alpha) \cdot Gf_{current}$$

where Gf_{old} is a preceding gain factor for a preceding portion of the digitized signal, where $Gf_{current}$ is the gain factor based on the portion of the digitized signal, and where $0 \leq \alpha < 1$.

Claim 53 (original): The method of attenuating noise according to Claim 52, where α is equal to about 0.5.

Claim 54 (original): The method of attenuating noise according to Claim 45, where the portion is one of a frame, a sub-frame, and a half frame.

Claim 55 (previously presented): A method of attenuating noise in a speech coding system, comprising:

(a) decoding at least one gain from a group of at least one bit in a bitstream;

(b) adjusting the at least one gain as a function of noise characteristic; and

(c) assembling the at least one gain into a portion of a reconstructed speech signal,

where the at least one gain is adjusted as a function of noise characteristic for attenuating background noise in at least one frame,

wherein the at least one gain is adjusted according to a gain factor, the gain factor facilitating time-domain background noise attenuation.

Claim 56 (original): The method of attenuating noise according to Claim 55, where the speech coding system comprises code excited linear prediction (CELP).

Claim 57 (original): The method of attenuating noise according to Claim 55, where the speech coding system comprises extended code excited linear prediction (eX-CELP).

Claim 58 (previously presented): The method of attenuating noise according to Claim 55, where step (b) further comprises adjusting the at least one gain according to the gain factor.

Claim 59 (original): The method of attenuating noise according to Claim 58, where the gain factor Gf is determined by the equation

$$Gf = 1 - C \cdot NSR$$

where NSR has a value of about 1 when the portion comprises essentially background noise, where NSR is the square root of background noise energy divided by signal energy when the portion comprises speech, and where C is in the range of 0 through 1.

Claim 60 (original): The method of attenuating noise according to Claim 58, where the gain factor is based on a running mean.

Claim 61 (original): The method of attenuating noise according to Claim 60, where the running mean Gf_{new} is determined by the equation,

$$Gf_{new} = \alpha \cdot Gf_{old} + (1 - \alpha) \cdot Gf_{current}$$

where Gf_{old} is a preceding gain factor for a preceding portion of the digitized signal, where $Gf_{current}$ is the gain factor based on the portion of the digitized signal, and where $0 \leq \alpha < 1$.

Claim 62 (original): The method of attenuating noise according to Claim 61, where α is equal to about 0.5.

Claim 63 (previously presented): A method of attenuating noise in a speech coding system, comprising:

(a) segmenting a digitized signal into at least one portion;

(b) determining at least one gain representing the digitized signal within the one portion;

(c) pre-adjusting the at least one gain as a function of noise characteristic;

(d) quantizing the at least one gain into a group of at least one bit for a bitstream.

(e) decoding the at least one gain from the group of at least one bit in the bitstream;

(f) post-adjusting the at least one gain as a function of noise characteristic; and

(g) assembling the at least one gain into a reconstructed speech signal,

where the at least one gain is adjusted as a function of noise characteristic for attenuating background noise in at least one frame,

wherein the at least one gain is adjusted according to a gain factor, the gain factor facilitating time-domain background noise attenuation.

Claim 64 (original): The method of attenuating noise according to Claim 63, where the speech coding system comprises code excited linear prediction (CELP).

Claim 65 (original): The method of attenuating noise according to Claim 63, where the speech coding system comprises extended code excited linear prediction (eX-CELP).

Claim 66 (previously presented): The method of attenuating noise according to Claim 63, where at least one of (c) and (f) further comprises adjusting the at least one gain according to the gain factor.

Claim 67 (original): The method of attenuating noise according to Claim 66, where the gain factor Gf is determined by the equation

$$Gf = 1 - C \cdot NSR$$

where NSR has a value of about 1 when the portion comprises essentially background noise, where NSR is the square root of background noise energy divided by signal energy when the portion comprises speech, and where C is in the range of 0 through 1.

Claim 68 (original): The method of attenuating noise according to Claim 66, where the gain factor is based on a running mean.

Claim 69 (original): The method of attenuating noise according to Claim 68, where the running mean Gf_{new} is determined by the equation,

$$Gf_{new} = \alpha \cdot Gf\ old + (1 - \alpha) \cdot Gf_{current}$$

where Gf_{old} is a preceding gain factor for a preceding portion of the digitized signal, where $Gf_{current}$ is the gain factor based on the portion of the digitized signal, and where $0 \leq \alpha < 0$.

Claim 70 (original): The method of attenuating noise according to Claim 69, where α is equal to about 0.5.